

**In the Claims**

Please cancel claims 24-30 and amend the claims in the manner indicated. A clean version of all pending claims after the amendment is shown on the following pages. A marked-up version of the amended claims is shown in Appendix A at the end of this response.

**Clean version of all pending claims:**

1. (Amended once) An apparatus comprising:  
    a multi-level optical waveguide comprising  
        a first substrate having a first opening therethrough;  
        a second substrate, attached to said first substrate, having a second opening therethrough and aligned with the first opening in said first substrate;  
        a first optically transparent material disposed in said first substrate hole; and  
        a second optically transparent material disposed in said second substrate hole.

2. (Amended once) The apparatus of claim 1, wherein said transparent material is a gas.

3. (Amended once) The apparatus of claim 1, wherein said transparent material is cladding grown on the inside of the substrate hole.

4. (Amended once) The apparatus of claim 1, wherein said transparent material is comprised of an outer cladding and a separate inner transparent material.

5. (Amended once) The apparatus of claim 1, wherein said transparent material is an optical fiber.

6. (Amended once) The apparatus of claim 1, wherein said first substrate is made of silicon.

7. (Amended once) The apparatus of claim 1, wherein said transparent material and said first substrate are made of a same material.

B,  
C  
D

8. (Amended once) The apparatus of claim 1 further comprising a source of electromagnetic radiation attached to said first substrate.

9. (Amended once) The apparatus of claim 1 further comprising a detector of electromagnetic radiation disposed at an end of said second opening.

10. (Amended once) The apparatus of claim 1 further comprising a conductive layer on said second substrate.

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11-30. (Cancelled)